31. *Petalocotyle nipponica, a New Type of the Trematode Family Allocreadiidae.*

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This trematode is remarkable in shape, having a large acetabulum projected prominently from the venter, and bearing at its margin petal-like appendages. These acetabular appendages recall the ornaments of the oral sucker of *Crepidostomum* Braun and the acetabular projections of *opecoelus* Ozaki. Another remarkable anatomical structure of this worm is the presence of a lymph canal system. A preliminary brief note is given as follows:—

Petalocotyle nipponica n. g. n. sp.

The body has an elongated shape attaining to 9.5 mm in length, 1.4 mm in breadth. The cuticle is smooth. The acetabulum is situated in the hind part of the anterior third of the body. It is large and elongated, measuring 1.1 mm in length, 0.85 mm in diameter. Its orifice is ornamented with petalic lobes, whose number is constant and amounts to 10. The oral sucker is elongated, measuring 0.45 mm by 0.36 mm. The prepharynx is long and shows the characteristic winding. It is surrounded by a deeply staining mass of gland cells. The pharynx is globular, measuring 0.25 mm in diameter. The esophagus is almost absent, being scarcely visible in sections (0.025 mm in length); the bifurcation into the intestinal crura occurs anterior to the acetabulum. The crura are broad and extend to near the posterior tip.

The genital pore is median and lies directly behind the intestinal bifurcation.

Two rounded testes are situated in the third quarter of the body intercecally, measuring 0.5–0.8 mm in diameter. They are always directly tandem and separated by a small space.

The seminal vesicle lies in the median line behind the acetabulum; its anterior end narrows and empties into the pars prostatica. The pars prostatica is situated directly behind and outside of the cirrus pouch, which lies on the dorsal side of the acetabulum but is displaced to one side of the latter in compressed total preparations. Around the pars prastatica there are densely stained prostatic gland cells. The

cirrus pouch is of slender conical shape and contains a long winding ductus ejaculatorius, of which the distal end is exsertile as a cirrus.

The ovary lies anterior to the anterior testis and is displaced slightly to the right. It is indented deeply in four lobes measuring about 0.3 mm in diameter.

A bladder-shaped receptaculum seminis measuring 0.4×0.15 mm lies between the ovary and the anterior testis. A Laurer's canal is present. The shell gland lies on the antero-dorsal side of the ovary in the median line of the body. The uterine coil is short and confined between the ovary and the genital pore intercecally.

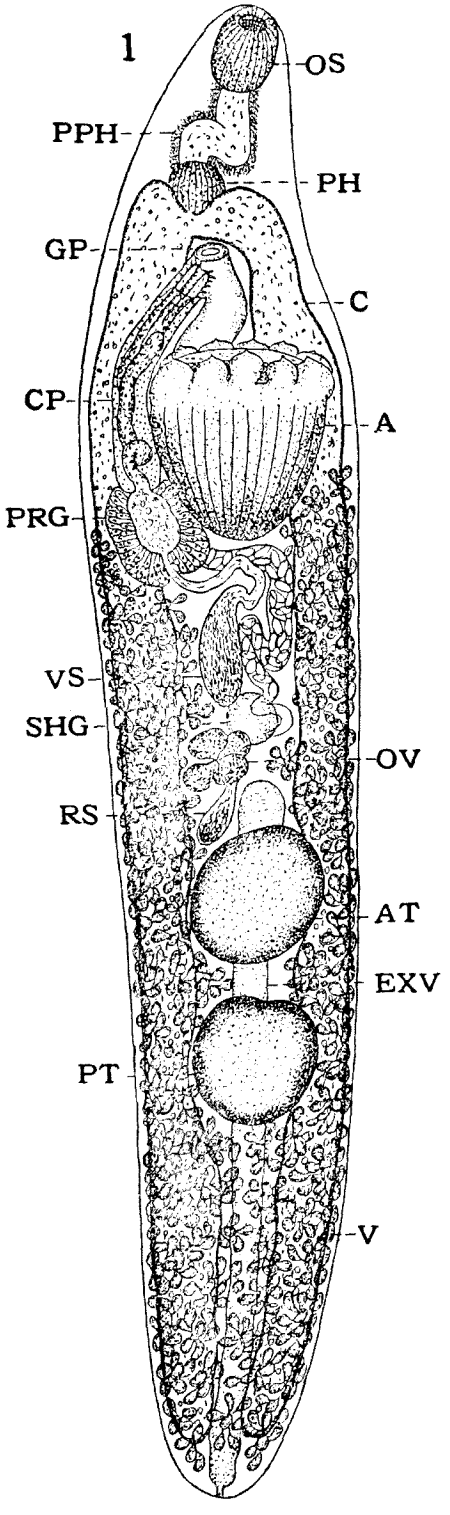
The vitellaria extend from the posterior margin of the acetabulum to the hindermost end of the body. They are on the ventral, dorsal and outer side of the cecum and coalesce in the median line in the post-testical space. The ova measure 0.071–0.076 mm by 0.043–0.048 mm.

The excretory vesicle runs as a single tube in the middle line, near the dorsal surface, as far forward as near the shell gland, where it gives off two common collecting tubes that diverge and extend anteriorly up to the anterior level of the acetabulum. Then the common collecting tube divides into anterior and posterior collecting tubes, which run forwards and backwards respectively in the lateral region of the body. The anterior collecting tube, after a tortuous course, divides into two tubes at the lateral side of the pharynx; the one procceds forwards and the other backwards, dividing dichotomously twice or more respectively. The posterior collecting tube turns and runs back side by side with the common collecting tube, and gives off the first branch at the level of the shell gland, the second at the anterior level of the anterior testis, the third at the anterior level of the posterior testis, and the fourth at the posterior level of the posterior testis. The first and the second branches divide dichotomously three or four times, though the remaining ones divide only once or twice.

Fig. 1. *Petalocotyle nipponica*, ventral view.

Fig. 2. Excretory system of *Petolocotyle nipponica*, side view, right half omitted.

A	Acetabulum	OV	Ovary
AT	Anterior testis	PCT	Posterior collecting tube
ACT	Anterior collecting tube	PH	Pharynx
C	Intestinal cecum	PPH	Prepharynx
CCT	Common collecting tube	PRS	Prostate gland
CP	Cirrus pouch	PT	Posterior testis
EXV	Excretory vesicle	RS	Reseptaculum seminis
GP	Genital pore	SHG	Shell gland
OS	Oral sucker	VS	Seminal vesicle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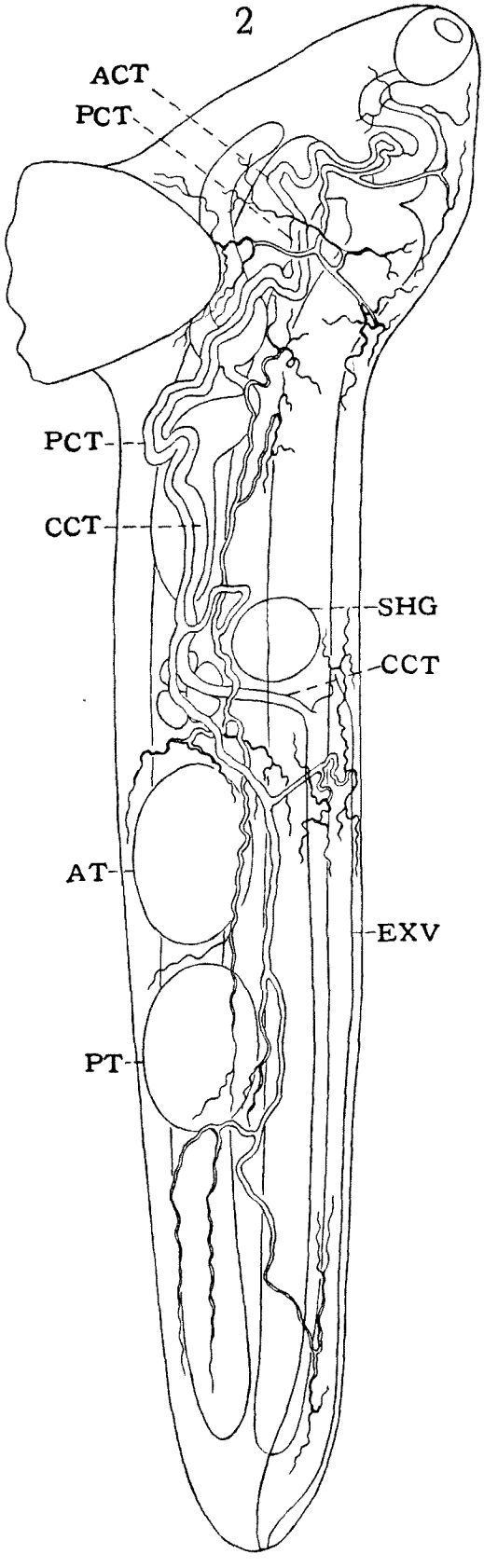
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In the parenchyma I want to note the presence of a lymph system, which has never been observed in the known genera of Allocreadiidae. The lymph system of this worm is composed of spaceous canals; they are restricted to the neck and never extend beyond the acetabulum. At the pharyngeal level I counted 12 spaces in cross sections, of which 4 lie lateral to the pharynx, 2 outside of the excretory canals (common collecting tubes), and the remaining 6 between the pharynx and the venter.

Habitat. Intestine of *Xesurus scalprum* (Cuvier and Valenciennes).

Locality. Hiroshima and Kagoshima, Japan.

Type specimen in the Zoological Institute, Literature and Science College of Hiroshima.

The disposition of the genital glands and the structure of the excretory system shows that this worm belongs to the family Allocreadiidae. The most striking characters of this worm are the acetabular appendages, the end-apparatus of the male reproductive organ, and the presence of a lymph system. This worm has some superficial resemblances to the genus *Lepidapedon* Stafford 1904 (=*Lepodora* Odhner) in the structure of the end-apparatus of the male reproductive organ, but in the latter genus the pars prostatica and a part of the seminal vesicle are enclosed in the cirrus pouch. Moreover, *Lepidapedon* has dermal spines and is devoid of acetabular appendages. In none of the members of the family Allocreadiidae is the lymph system observed. Because of these points I segregate this species as a new type, and propose the name *Petalocotyle.*